REMARKS

An Excess Claim Fee Payment Letter is submitted herewith to cover the cost of four (4) excess total claims.

Claims 1-7, 15-19 and 23-31 and 33-37 are all the claims presently pending in the application. Claims 1, 4 and 5 have been amended. Claims 33-37 have been added to claim additional features of the claimed invention.

It is noted that the claim amendments are made only for more particularly pointing out the invention, and not for distinguishing the invention over the prior art, narrowing the claims or for any statutory requirements of patentability. Further, Applicant specifically states that no amendment to any claim herein should be construed as a disclaimer of any interest in or right to an equivalent of any element or feature of the amended claim.

Claims 1-2, 4-7, 17-18, 23-24 and 26-31 stand rejected under 35 U.S.C. § 102(a) as being allegedly anticipated by Ishikawa (JP 11-330,565). Claims 3, 15-16, 19 and 25 stand rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Ishikawa in view of Komoto (U. S. Patent No. 5,753,940).

These rejections are respectfully traversed in view of the following discussion.

I. THE CLAIMED INVENTION

Applicant's invention (as recited in the exemplary embodiment of claim 1) is directed to a group III nitride compound semiconductor light-emitting device which includes a semiconductor laminate portion formed on a substrate and including a light-emitting layer, and a reflection surface provided on the substrate and disposed so as to be opposite to a side surface of the light-emitting layer. A predetermined distance is provided between the semiconductor laminate portion and the reflection surface.

In a related art light-emitting device, a reflection surface may be formed on the wall 55 of a cup portion (e.g., Application at Figure 4B; page 22, lines 1-9). That is, the reflection surface is not provided on the same substrate as the semiconductor laminate portion. In such devices, however, a large distance (e.g., 200-300 μm) separates the side surface of the light-emitting layer and the reflection surface. Therefore, the light component reflected is a light component within a very small angle (Application at page 22, lines 1-9).

The claimed invention, on the other hand, includes a reflection surface provided on the substrate and disposed so as to be opposite to a side surface (e.g., a vertical side surface) of the light-emitting layer (Application at Figures 2B, 4A, 5B, 6B and 7; page 14, lines 8-25). This allows the device to be easily fabricated and effectively utilize the light emitted from the side surface of the semiconductor laminate portion (e.g., Application at page 5, line 13-page 6, line 5; page 31, lines 11-17).

II. THE ALLEGED PRIOR ART REFERENCES

A. Ishikawa

The Examiner alleges that Ishikawa teaches the claimed invention of claims 1-2, 4-7, 17-18, 23-24 and 26-31. Applicant would argue, however, that there are elements of the claimed invention which are neither taught nor suggested by Ishikawa.

Ishikawa discloses a light-emitting device 18 which includes a luminous layer 34 and a substrate 30 and is mounted on a mounting base 16. A reflective film 40 is formed on the **bottom of the substrate 30** to reflect light in a direction toward the luminous layer 34, and reflecting mirror 44 is formed on **a side face of the crevice 28 formed in the mounting base 16**, and reflecting mirror 48 is formed on the slant face 29 of slot 46 which is formed in the mounting base 16 beneath the electrode 24 (Ishikawa at [0034], [0037]; Drawings 1, 2(b) and 6),

Applicant would argue, however, that Ishikawa does not teach or suggest *"a reflection surface **provided on said substrate** and disposed so as to be opposite to a side surface of said light-emitting layer"* as recited, for example, in claim 1.

As noted above, unlike the related art light-emitting device in which a reflection surface may be formed on **the wall 55 of a cup portion** (e.g., Application at Figure 4B; page 22, lines 1-9), the claimed invention includes a reflection surface **provided on the substrate (e.g., the same substrate on which the semiconductor laminate portion is formed)** and disposed so as to be opposite to a side surface (e.g., a vertical side surface) of the light-emitting layer (Application at Figures 2B, 4A, 5B, 6B and 7; page 14, lines 8-25). This allows the device to be easily fabricated and effectively utilize the light emitted from the side surface of the semiconductor laminate portion (e.g., Application at page 5, line 13-page 6, line 5;

page 31, lines 11-17).

Clearly, these features are not taught or suggested by Ishikawa. Indeed, Ishikawa has nothing to do with the claimed invention and the Examiner's arguments in support of the rejection are completely unreasonable.

First, Applicant would point out that the only substrate disclosed by Ishikawa is substrate 30. In the Ishikawa device, semiconductor layers 32 and 36, and luminous layer 34 are formed on top of the substrate 30 and the reflective film 40 is formed on the bottom of the substrate 30 (Ishikawa at [0037]). However, nowhere does Ishikawa teach or suggest that the reflective film 40 is **disposed so as to be opposite to a side surface of luminous layer 34**.

Indeed, in an exemplary embodiment of the claimed invention, the Application defines a "side surface" as a "surface of elevation" (e.g., a vertical surface) (Application at page 10, lines 4-7). Applicant would remind the Examiner that the claims must be construed in light of the specification.

Further, Applicant would point out that the Ishikawa device is similar to the related art device depicted in Figure 4B of the present Application. That is, like the wall 55 of the cup portion in Figure 4B in the Application, the reflecting mirror 44 formed on a side face of the crevice 28 formed in the mounting base 16 reflects light which is emitted from the side surface of the luminous layer 34. However, like the wall 55 in Figure 4B in the Application, the reflecting mirror 44 is not **provided on the substrate (e.g., the same substrate on which a semiconductor laminate portion is formed)**. Thus, it is completely unreasonable to attempt to equate the reflecting mirror 44 in Ishikawa with the reflection surface of the claimed invention.

Further, the Examiner **surprisingly** alleges that Ishikawa teaches a reflection mirror made of a material that is the same as an n pad electrode. This is clearly incorrect. In fact, **Ishikawa merely teaches that the reflective film 40 should be etched away from the area of the substrate 30 which is beneath the p-type pad electrode 24** (Ishikawa at [0037]). This is done to allow light from luminous layer 34 to exit the bottom of the substrate 30 and be reflected by the reflecting mirror 48. Thus, the Examiner completely mischaracterizes the Ishikawa device.

Indeed, the Examiner makes numerous references in the Office Action to a "n pad electrode" in Ishikawa. However, nowhere does Ishikawa even mention an "n pad electrode".

Ishikawa may make passing reference to a "substrate-side pad electrode 26" (Ishikawa at Drawing 2(a)), but Ishikawa merely teaches that the electrode 26 is formed on an n-type semiconductor layer 32 (Ishikawa at [0028]).

Clearly, Ishikawa does not teach or suggest that the reflective film 40 or the reflecting mirrors 44, 48 includes a material which is the same as that of pad electrode 26, or that the reflective film 40 or the reflecting mirrors 44, 48 include a portion of pad electrode 26, as alleged by the Examiner. Again, the Examiner completely mischaracterizes the Ishikawa device.

In short, nowhere does Ishikawa teach or suggest a reflection surface **provided on a substrate (e.g., the same substrate on which a semiconductor laminate portion is formed)** and disposed so as to be opposite to a side surface (e.g., a vertical side surface) of a light-emitting layer.

Therefore, Applicant would argue that there are elements of the claimed invention that are not taught or suggest by Ishikawa. Therefore, the Examiner is respectfully requested to withdraw this rejection.

B. Komoto

The Examiner alleges that Ishikawa would have been combined with Komoto to form the invention of claims 3, 15-16, 19 and 25. Applicant submits, however, that these alleged references would not have been combined and even if combined, the combination would not teach or suggest each and every element of the claimed invention.

Komoto discloses a light-emitting diode which includes a groove for suppressing light radiation horizontally propagating and leaking from a chip side wall (Komoto at col. 2, lines 55-56).

However, Applicant submits that these references are completely unrelated, and no person of ordinary skill in the art would have considered combining these disparate references, absent impermissible hindsight.

In fact, Applicant submits that the references provide no motivation or suggestion to urge the combination as alleged by the Examiner. Indeed, these references clearly do not teach or suggest their combination. Therefore, Applicant respectfully submits that one of ordinary skill in the art would not have been so motivated to combine the references as

alleged by the Examiner. Therefore, the Examiner has failed to make a prima facie case of obviousness.

Moreover, Applicant would argue that neither Ishikawa, nor Komoto, nor any alleged combination thereof teaches or suggests *"a reflection surface **provided on said substrate** and disposed so as to be opposite to a side surface of said light-emitting layer"* as recited, for example, in claim 1.

As noted above, unlike the related art light-emitting device in which a reflection surface may be formed on **the wall 55 of a cup portion** (e.g., Application at Figure 4B; page 22, lines 1-9), the claimed invention includes a reflection surface **provided on the substrate (e.g., the same substrate on which the semiconductor laminate portion is formed)** and disposed so as to be opposite to a side surface (e.g., a vertical side surface) of the light-emitting layer (Application at Figures 2B, 4A, 5B, 6B and 7; page 14, lines 8-25). This allows the device to be easily fabricated and effectively utilize the light emitted from the side surface of the semiconductor laminate portion (e.g., Application at page 5, line 13-page 6, line 5; page 31, lines 11-17).

Clearly, these features are not taught or suggested by Komoto. Indeed, Applicant would point out that as with Ishikawa, the Examiner has mischaracterized the Komoto device.

The Examiner surprisingly states that Komoto teaches a "groove etched in the layers to provide a separated reflective surface". This is clearly incorrect. Indeed, Komoto teaches "the angle of a side wall plane of the groove 8 cutting the active layer 3 being selected to have a specific angle so as not to leak light propagating in parallel with the plane of the active layer, to the external of the semiconductor chip" (Komoto at col. 2, line 66-col. 3, line 2).

That is, the purpose of Komoto is to suppress light from leaking to the external side of a chip. This is made overwhelmingly clear from Figure 3D which shows that light emitted from active layer 3 is NOT REFLECTED BY OUTER SIDE WALL 11, but merely refracted. Komoto states that if the angle of incidence upon the side wall 10 complies with formula (4), light will not leak from the chip (Komoto at col. 3, lines 59-63).

Therefore, like Ishikawa, nowhere does Komoto teach or suggest a reflection surface **provided on a substrate (e.g., the same substrate on which a semiconductor laminate portion is formed)** and disposed so as to be opposite to a side surface (e.g., a vertical side surface) of a light-emitting layer. Therefore, Komoto clearly does not make up for the

deficiencies in Ishikawa.

Therefore, Applicant submits that these alleged references would not have been combined, but even if these alleged references would have been combined, the combination would not teach or suggest each and every element of the claimed invention. Therefore, the Examiner is respectfully requested to withdraw this rejection.

IV. FORMAL MATTERS AND CONCLUSION

In view of the foregoing, Applicant submits that claims 1-7, 15-19 and 23-31 and 33-37, all the claims presently pending in the application, are patentably distinct over the prior art of record and are in condition for allowance. The Examiner is respectfully requested to pass the above application to issue at the earliest possible time.

Should the Examiner find the application to be other than in condition for allowance, the Examiner is requested to contact the undersigned at the local telephone number listed below to discuss any other changes deemed necessary in a telephonic or personal interview.

The Commissioner is hereby authorized to charge any deficiency in fees or to credit any overpayment in fees to Attorney's Deposit Account No. 50-0481.

Respectfully Submitted,

Date: 5/31/06

Phillip E. Miller, Esq.
Registration No. 46,060

McGinn IP Law Group, PLLC
8321 Old Courthouse Road, Suite 200
Vienna, VA 22182-3817
(703) 761-4100
Customer No. 21254

CERTIFICATE OF FACSIMILE TRANSMISSION

I hereby certify that the foregoing Amendment was filed by facsimile with the United States Patent and Trademark Office, Examiner Laura Schillinger, Group Art Unit # 2813 at fax number (571) 273-8300 this 31st day of May, 2006.

Phillip E. Miller
Reg. No. 46,060